

CHAPTER 7

LRU-29/P22P-20 SEALED LIFERAFT ASSEMBLY

Section 7-1. Description

7-1. GENERAL.

7-2. The LRU-29/P22P-20 Sealed Liferaft Assembly is a vacuum packaged one-person liferaft utilized in the A/P22P-20 Crew Backpack Assembly. It is intended for use by an aircrew member forced down at sea. It can also be used when forced down over land for crossing rivers and streams or for shelter. See [figure 7-1](#) and [figure 7-2](#).

7-3. CONFIGURATION.

7-4. The LRU-29/P22P-20 Sealed Liferaft Assembly is a vacuum packaged LRU-16/P. The raft is re-designated after vacuum packaging by the manufacturer of the A/P22P-20 Crew Backpack Assembly. It consists of a FLU-10 zero leak inflator, and a one person liferaft constructed of polyurethane coated nylon fabric that is assembled using radio frequency (heat sealed) welding techniques. The liferaft comes with an inflatable floor and weather shield for insulation from the elements. The liferaft is stowed in the SRU-41/P22P-20 Survival Equipment Kit Assembly of the A/P22P-20 Crew Backpack Assembly and is tethered to the assembly via a lanyard. The liferaft is manufactured with lusterless blue colored nylon cloth.

7-5. MAJOR COMPONENTS.

7-6. FLOATATION CHAMBER. The main floatation platform of the LRU-29/P22P-20 consists of two fabric panels welded to form the floatation chamber. The inflatable floor and canopy are welded to the main body to complete the structure of the raft. Installed accessories include:

1. FLU-10 zero leak inflator, which is attached to the liferaft via an inlet valve.
2. Oral inflation valve for adjusting liferaft pressure or for inflating liferaft should the bottle fail.

3. Boarding handles.
4. Ballast bags (provide stability).
5. Sea anchor (attached to main tube).

7-7. INFLATABLE FLOOR. The floor of the LRU-29/P22P-20 consists of two layers of fabric welded to the bottom of the main floatation tube. The layers are uniformly spot welded in regularly spaced circular welds to form the inflation chamber for the floor. The floor is inflated through an attached oral inflation tube. Installed accessories include:

1. Oral inflation valve.
2. Boarding and righting handles.
3. Floor patch for securing survival equipment.

7-8. CANOPY. The canopy (weather shield) of the LRU-29/P22P-20 is constructed similar to the floor so it can be inflated to provide protection from the elements. When inflated it can be secured in the closed position with Velcro. The inside of the raft canopy is made with International Orange cloth for use in signaling. Installed accessories include:

1. Stowage pocket located on outside for strobe light.
2. Canopy oral inflation tube.
3. Velcro closure for sealing canopy.

7-9. APPLICATION.

7-10. The LRU-29/P22P-20 Liferaft Assembly is only authorized for use in the A/P22P-20 Crew Backpack Assembly used in the E-2C.

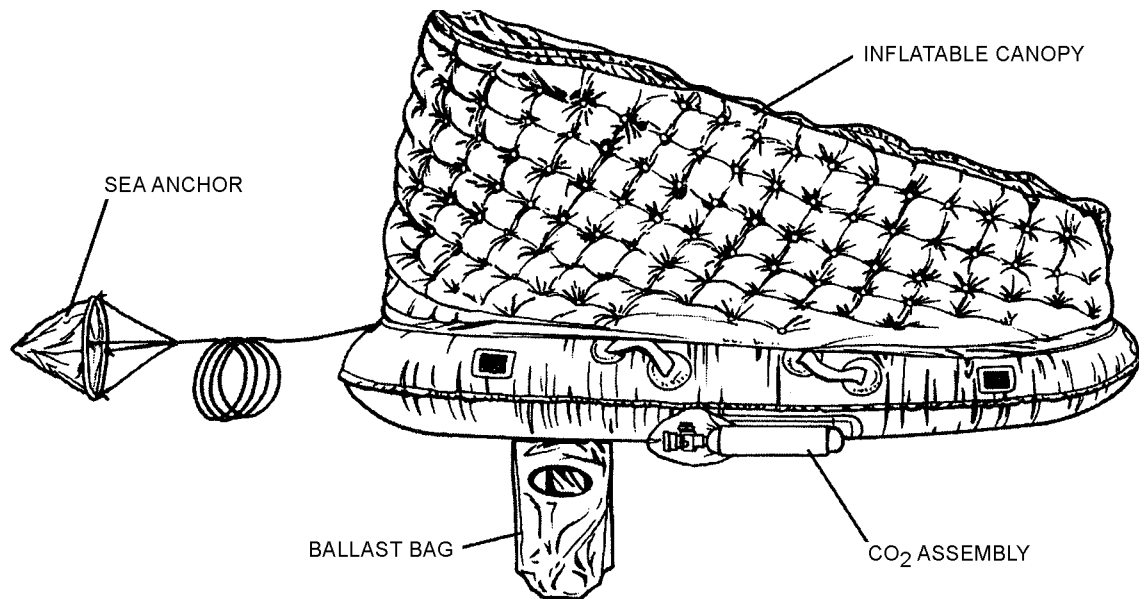


Figure 7-1. LRU-29/P22P-20 Liferaft (Inflated)

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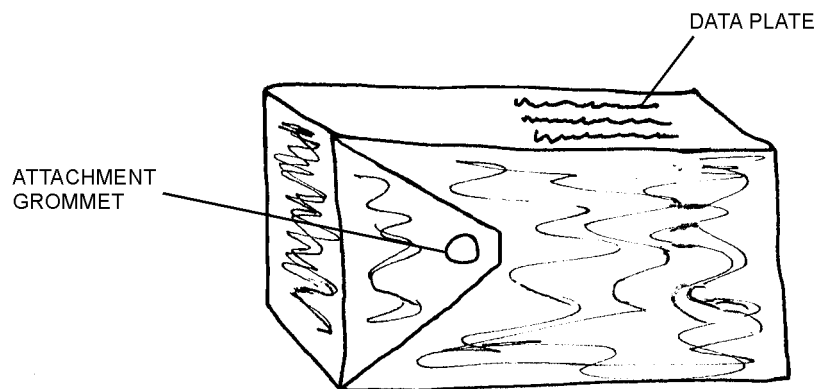


Figure 7-2. LRU-29/P22P-20 Liferaft (Vacuum Packaged)

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7-11. FUNCTION.

7-12. The LRU-29/P22P-20 liferaft is deployed by the aircrew. If emergency egress from the aircraft occurs over water, aircrew should deploy the raft prior to water entry if conditions allow. The liferaft should open and inflate automatically after deployment during decent. The bridle cord is attached to

a grommet in the LRU-29/P22P-20 sealed packaging and the SRU-41/P22P-20 Survival Equipment Kit. When the bridle cord is fully extended, the vacuum sealing is torn open and a separate internal line attached to the FLU-10 inflation valve actuates the inflation process via gravity drop. If emergency egress occurs over land deployment of the liferaft is not recommended prior to landing.

Section 7-2. Modifications**7-13. GENERAL.**

7-14. There are no authorized modifications to the LRU-29/P22P-20 Liferaft Assembly at this time.

Section 7-3. Maintenance**7-15. GENERAL.**

7-16. The LRU-29/P22P-20 is an environmentally sealed liferaft. There are no repairs or fabrications authorized for the LRU-29/P22P-20 liferaft. Maintenance is limited to inspection only.

7-17. All work shall be accomplished on a smooth surface free of snags and splinters. Any puncture to the packaging will cause the liferaft to be rejected. All maintenance actions shall be recorded on appropriate maintenance records in accordance with OP-NAVINST 4790.2 Series.

7-21. The Place-In-Service inspection shall be performed on all new assemblies, or assemblies returned from vendor repair or overhaul. The AIMD performs this inspection.

7-22. The Daily/Turnaround inspection is performed on aircraft installed assemblies, in accordance with aircraft MRC requirements.

7-23. The 14-Day Special Inspection shall be accomplished at the organizational level.

7-18. INSPECTION.

7-19. The LRU-29/P22P-20 liferaft assembly shall be subjected to the following inspections: Place-In-Service, Daily/Turnaround, Special 14-Day, Special 448-Day, Special 1792-Day (Repack/Overhaul), and Acceptance.

7-20. If the vacuum packaged liferaft fails any inspection criteria it shall be returned to the vendor for repair. See paragraph 7-35 for return information.

7-24. The 448-Day Special Inspection shall be accomplished at the AIMD.

7-25. The 1792-Day Special Inspection (Repack/Overhaul) will be accomplished by AIMD and the vendor designated to perform the repack/overhaul. AIMD will forward the LRU-29/P22P-20 to the designated vendor. AIMD may install a spare raft to RFI the Backpack Assembly and place the overhauled liferaft in the ALSS Pool upon its return from the vendor.

NAVAIR 13-1-6.1-1

7-26. The Acceptance Inspection shall be accomplished as directed during the aircraft inventory.

7-27. All liferafts shall be subjected to Phase/Isochronal/Special Inspections prior to placing in service or, if an aircraft inventory item, at the time of the aircraft Acceptance Inspection. Thereafter the inspection interval shall coincide with the aircraft inspection cycle in which the equipment is installed. See the applicable aircraft maintenance instruction manuals or MRCs.

7-28. QUALITY ASSURANCE. The procedures detailed present a logical sequence for proper inspection. Quality assurance steps are provided for critical operations. When a step is underlined, the Aircrew Survival Equipmentman shall perform the operation, then have performance verified by a Quality Assurance Representative (CDI, CDQAR, or QAR) prior to proceeding to the next operation. Work center supervisors are primarily responsible for quality assurance and in accordance with OPNAVINST 4790.2 Series may nominate experienced personnel in their work center to be screened and examined by the Quality Assurance Officer prior to their designation by the Commanding Officer as a Collateral Duty Inspector. In no case shall an Aircrew Survival Equipmentman perform his own quality assurance inspection. Procedures for quality assurance are listed following major operations.

7-29. PLACE-IN-SERVICE INSPECTION. To perform the Place-In-Service Inspection, proceed as follows:

1. The A/P22P-20 Crew Backpack Assembly is received from the manufacturer assembled and ready to be placed in the aircraft. The Place-In-Service Inspection consists of a visual inspection of the assembly and a records check to ensure all data is entered on the history records. If there are no discrepancies discovered during the visual or records inspection the A/P22P-20 can be placed in service. If discrepancies exist that require the opening of the Survival Kit, proceed to steps (2) through (4).



Do not use sharp objects in the vicinity of the vacuum-sealed LRU-29/P22P-20 life-

raft. Ensure the surface where you place the liferaft is smooth and free of splinters. Do not lift the liferaft by the grommet or tear strip as it may open the vacuum seal at the initiator cuts. Liferafts that have lost vacuum must be returned to the vendor for rework.

2. Inspect vacuum packaging for pillowing (soft package) the liferaft packaging should be in a brick form. If the liferaft is pillowed return to vendor, follow instructions in paragraph 7-35. Inspect the edges of packaging for cuts or tears that are migrating towards the sealed edges, as long as the tear or cut has not started into the package sealing it shall be considered RFI. If a cut or tear has begun to tear a sealed edge, the raft shall be returned to the vendor for repair. Follow return instructions in paragraph 7-35.

3. Inspect the liferaft bridle cord for cuts, abrasion and integrity.

4. Service Life Verification. Verify date of manufacture and date placed-in-service by checking data plate on vacuum packaging, make necessary entries on appropriate form(s) in accordance with OPNAVINST 4790.2 Series.

5. Install the liferaft into the SRU-41/P22P-20 Survival Equipment Assembly in accordance with NAVAIR 13-1-6.3-1.

7-30. 14-DAY SPECIAL INSPECTION. To perform a 14-Day Special Inspection, proceed as follows:



Do not open the assembly, break any seals, or safety ties for this inspection. This is a visual inspection only.

1. Inspect the A/P22P-20 assembly, for obvious defects, torn stitching, corrosion, stains, cuts, tears, deterioration and abrasion.

7-31. 448-DAY SPECIAL/ACCEPTANCE INSPECTION. To perform the 448-Day Special/Acceptance Inspection, proceed as follows:



Do not use sharp objects in the vicinity of the vacuum-sealed LRU-29/P22P-20 liferaft. Ensure the surface where you place the liferaft is smooth and free of splinters. Do not lift the liferaft by the grommet or tear strip as it may open the vacuum seal at the initiator cuts. Liferafts that have lost vacuum must be returned to the vendor for rework.

1. Inspect vacuum packaging for pillowing (soft package) the liferaft packaging should be in a brick form. If the liferaft is pillowed return to vendor, follow instructions in paragraph 7-35. Inspect edges of packaging for cuts or tears that are migrating towards the sealed edges, as long as the tear or cut has not started into the package sealing it shall be considered RFI. If a cut or tear has begun to tear a sealed edge, the raft shall be returned to the vendor for repair. Follow return instructions in paragraph 7-35.

2. Service Life Verification. Verify date of manufacture and date placed-in-service by checking data plate on vacuum packaging, make necessary entries on appropriate form(s) in accordance with OP-NAVINST 4790.2 Series.

3. Install the liferaft into the SRU-41/P22P-20 Survival Kit Assembly in accordance with the NAVAIR 13-1-6.3-1.

7-32. 1792-DAY SPECIAL INSPECTION (REPACK/OVERHAUL). To perform the 1792-Day Special Inspection, proceed as follows:

1. Forward the liferaft to the designated vendor, follow instructions in paragraph 7-35. Replace with new or newly overhauled liferaft following the Place-In-Service Inspection in paragraph 7-29.

7-33. CLEANING AND SERVICING

7-34. CLEANING THE LRU-29/P22P-20. To clean, proceed as follows:

Materials Required

Quantity	Description	Reference Number
As Required	Detergent, General Purpose	MIL-D-16791 NIIN 00-282-9699
As Required	Cloth, Lint Free, Type II	MIL-C-85043 NIIN 00-044-9281



Solvents are not to be used in cleaning the sealed LRU-29/P22P-20 liferaft. Use extreme care when cleaning around the area surrounding the initiator cuts.

1. Dab or blot excess oil, fluid or dirt off of area being cleaned. Do not rub into material.

2. Prepare solution of detergent (MIL-D-16791) consisting of 1/4 to 1/2 ounce of detergent per gallon of water.

3. Clean affected area with lint free cloth or sponge.

4. Dry with lint free cloth.

7-35. REPACK/OVERHAUL VENDOR INFORMATION.

1. The LRU-29/P22P-20 Sealed Liferaft Assembly must be returned to the designated depot overhaul factory every five years for inspection and repackaging.

2. Ensure the liferaft is properly packaged to prevent damage in shipment. Improperly packaged liferafts that are damaged in shipment may be condemned and the shipping command may be charged for the cost of a new assembly.

3. Ship via traceable means to: TBP.

4. LRU-29/P22P-20 Liferaft Assemblies returned by the vendor after overhaul shall be subjected to the inspections required in paragraph 7-18.

Section 7-4. Illustrated Parts Breakdown (IPB)

7-36. GENERAL.

7-37. This section lists and illustrates the assemblies and detail parts of the LRU-29/P22P-20 Sealed Life-Ra Assembly (figure 7-3).

7-38. The Illustrated Parts Breakdown should be used during maintenance when requisitioning and identifying parts.

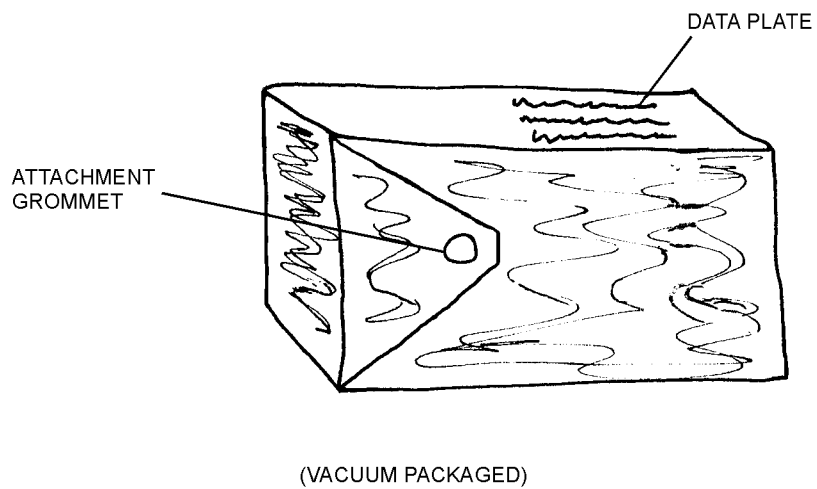
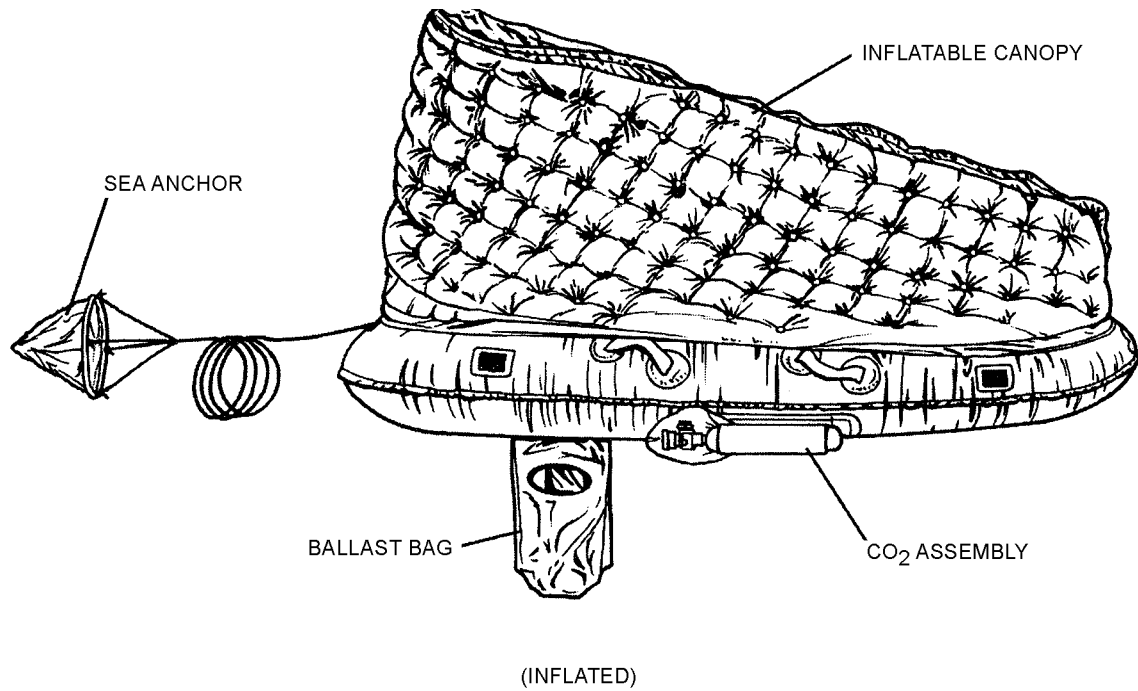


Figure 7-3. LRU-29/P22P-20 Liferaft Illustrated Parts Breakdown

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Figure and Index Number	Part Number	Description	Units Per Assembly	Usable On Code
		1 2 3 4 5 6 7		
7-3	3516AS4200-1	SEALED LIFERAFT ASSEMBLY, LRU-29/P22P-20 (54786)	REF	

NUMERICAL INDEX

Part Number	Figure and Index Number	SM&R Code	Part Number	Figure and Index Number	SM&R Code
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3516AS4200-1 7-3 PAGDD